



Universal Cable/Harness Tester 8700

User Manual

1.0



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- ◆ Transformer Tester
- ◆ LCR Meter
- ◆ Cable/Harness Tester
- ◆ Power Cord Tester
- ◆ Universal Function Tester
- ◆ Network Device Tester
- ◆ ICT (In-Circuit Tester)
- ◆ DC Fan Tester
- ◆ Motor Tester



“Good tools are prerequisite the successful execution of a job”
read and follow all instructions and installation carefully,
the product can provide you the best!

Version (1.0)





CT-8700 User's Guide

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Chapter I General Exposition

I.1 Package & Equipment

Standard equipment included in the CT-8700 professional Cable/Harness Tester are listed below:

■ CT-8700 Pro. Cable/Harness Tester	x1
■ Power cord & Power line adapter	x1
■ User's Guide	x1

I.2 Symbol & Word

■ [xxxx]	Fast Key (i.e. [TEST])
■ Sy[xxxx]	SoftKey, y is the no. of Softkey (1~6), xxxx is the Function (i.e. S2[PROG])
■ {xxxxxxxx}	Message on LCD
■ xxxx	Selecting items on LCD (i.e. ON)
■ <Pxx>	Reference pages (i.e.<P21>)
■ (xxxx)	English exposition



Operation Procedure

■	Notice/Attention
⌚	Shortcuts

I.3 General Operation Guidelines

- **Alphanumeric Input** When save a file that need key in alphanumeric, this series is use the Edit Key. The first time pressing is number, the second to fourth pressing each meaning follow the number key from left to right side of the top capital, For example as below:

Key	Key Pressed	LCD	Display
1	1		1
→	1		1
1	2		1A
→	1		1A
1	3		1AB

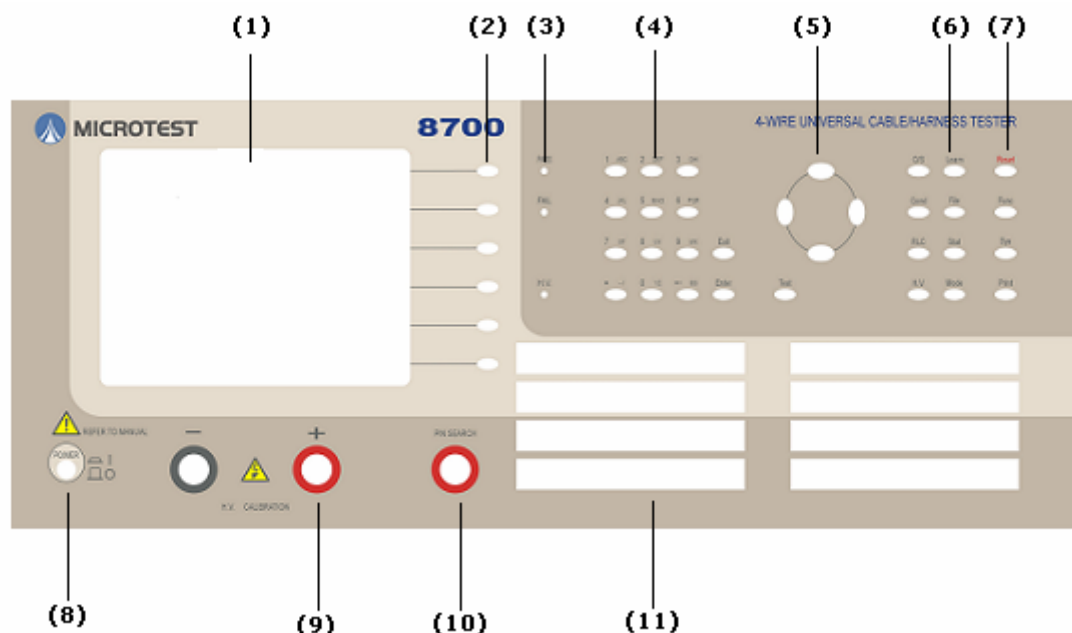
- **Move** Click[←][↑][→][↓]to move cursor
- **Confirmation** Press [Enter]to confirm
- **Test/Exit** Press [TEST]to start test , [Exit] to exit
- **Shift** Press [Shift] to launch alternative function



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I.4 Tester Tour

I.4.A The Front Panel



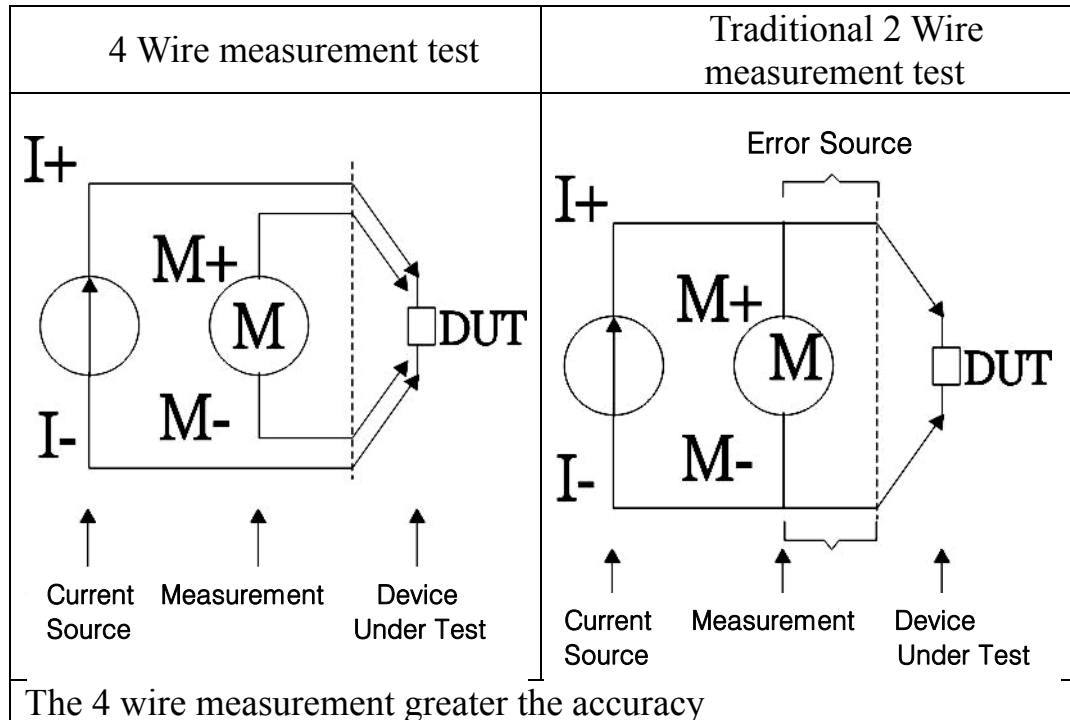
- (1) LCD Display
- (2) S1~S6 SoftKeys
- (3) PASS & FAIL & HIPOT LED Indicator
- (4) EditKey Group
- (5) MoveKey Group
- (6) Fastkey Group
- (7) SysKey Group
- (8) Power Switch
- (9) HV Calibration Output
- (10) Pin Search Connector
- (11) 256 Pin Fixture Connector Slot (4 Slots are shown with 256 Pins. Only A and B two slots equipped with standard 128 pins)

CHAPTER II System Function & Configuration

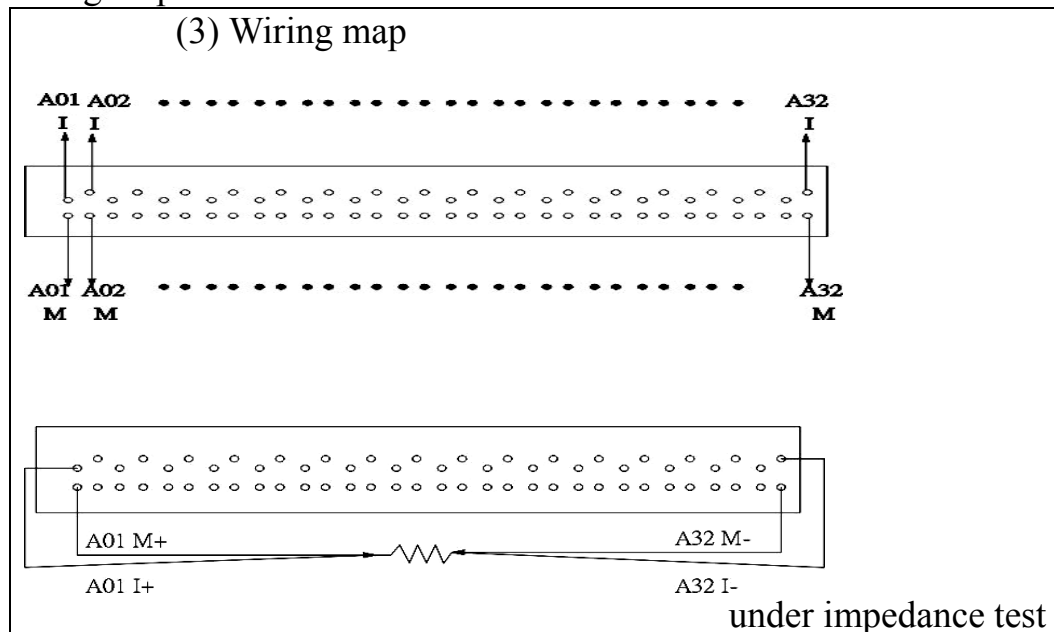
I.4.B The points

(1) This series is 4 Wire measurement, it can test micro-resistance, but each test point must have 2 connected point with instrument.

(2)

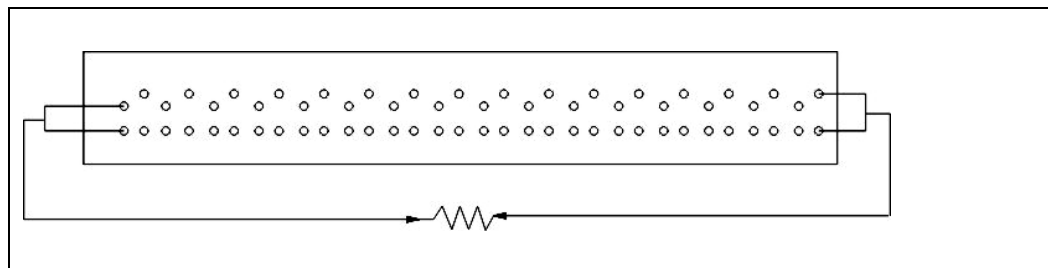


(3) Wiring map



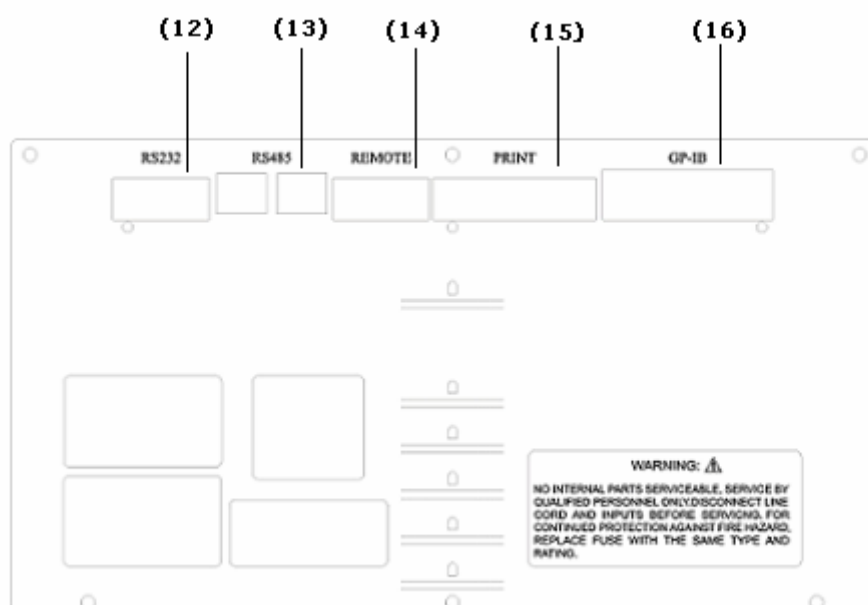


- (4) When change over from 4 wire to 2 wire measure mode, simply short 2 pins together then connect to DUT.



- (5) When the 4 wire circuit connect incorrect that will lead to the unforeseen test result.
- (6) Please use the fixture wiring function to test the fixture wiring whether correct or not.

I.4.C The Rear Panel



- (12) RS-232 Port(Reserved)
- (13) RS-485 Port(Reserved)
- (14) Remote Port
- (15) Printer Port
- (16) GPIB Port(Reserved)

- Please be sure AC voltage setting is consistent with applied voltage.
- Make sure the AC power is grounding.

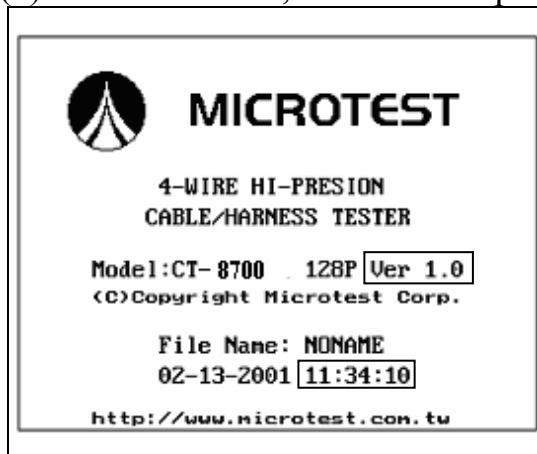


I.5 System Installation



Operation Procedure

- Be sure the AC input voltage selector on the rear panel, power supply is set to the proper position (AC 115 or 230V)
- Connect the converter and DUT cable
- Turn on the power the system will process self-test
- After self-test, LCD will display the READY SCREEN as below



← Software Version

← Current Time

- Press power switch to turn the system off if needed
- The self-test will be conducted right after the system is turned on. It will take 60 80 seconds.
 - ⌚ At the {READY} status, (Ready Screen display), Softkey S1 to S6 have the following functions.
 - S1 Higher LCD contrast
 - S2 Lower LCD contrast
 - S5 Display current software version and time
 - S6 Select English/Chinese

CHAPTER II System Function & Configuration

I.6 Key Definition

I.6.A Syskey Group

[Func]	Function Menu
[Sys]	System Configuration Menu
[Print]	Printing Menu

I.6.B Fastkey Group

[O/S]	Display the Open/Short Status
[Learn]	Open/Short Auto Learning
[File]	File Management
[Stat]	Display the statistic information
[Mode]	Test Mode Setup
[Cond]	Conductance Test Setup
[RLC]	Resistance/Inductance/Capacitance/Diode Test Setup
[H.V.]	High Voltage Setup

I.6.C EditKey Group

Alphanumeric key	Use for key in alphanumeric, including 0~1 and A~Z, . /
[BS] (←)	Back Space
Cursor Keys	Use to move cursors, including[←] [→] [↑] [↓]
	And [PgUp] [PgDn]
[Exit]	Exit from current status/screen

I.6.D [Enter] Confirmation

I.6.E [TEST] To start test

I.6.F [Reset] System will be re-started when pressed to perform the warm start.

I.6.G SoftKey Group

S1~S6 keys are located on the right side of LCD display and correspond for the auxiliary setup/activate/switch function.



Chapter II System Function and Configuration

System Function and Configuration, including **Main Function** .**System Configuration Setup** and **Printing Function**, is described detail as following.

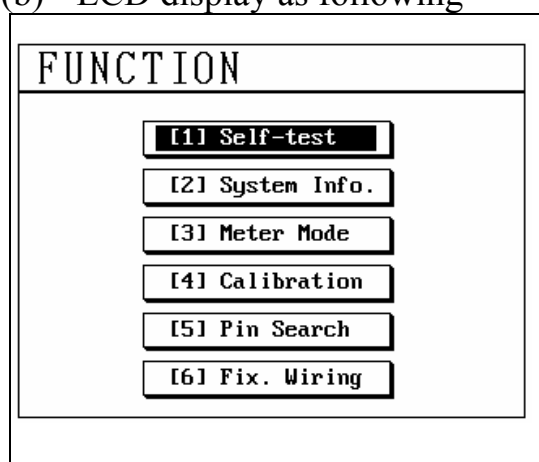
II.1 System Function

Main function includes several advanced functions, which are described below:



Operation Procedure

- (a) Press[Func]
- (b) LCD display as following



- (c) Press [↑] or [↓] to select the item needed
- (d) Press [Enter] to confirm selection
- (e) press[Exit] to return

II.1.A Selftest

The SELFTEST routine is to test the CPU, RAM, ROM, EEPROM, and CLOCK.



Operation Procedure

- (a) Press [Func]
- (b) Press [↑] or [↓] to select the item and press[Enter]
- (c) The program is running self-Test function
- (d) LCD display as following

SELF-TEST	
ITEM	TEST
[1] CPU	OK
[2] RAM	OK
[3] ROM	OK
[4] EEPROM-1	OK
[5] EEPROM-2	N/A
[6] CLOCK	OK

SKIP ← Stop Self-Test

QUIT

- (e) Press [Exit] to return



II.1.B System Version information

This function provides the instrument information including Model/Test Capability/Software Version/Edition/Released Date/ Total File Space and Free File Space Operation Procedure

(a) Press [Func], using [↑] or [↓] to select the item

FUNCTION	
[1]	Self-test
[2]	System Info.
[3]	Meter Mode
[4]	Calibration
[5]	Pin Search
[6]	Fix. Wiring

(b) Press [Enter] , LCD display as following

SYSTEM INFO.	
[1] MODEL	CT-8700
[2] TEST CAPABILITY	128
[3] SOFTWARE VERSION	1.0
[4] EDITION	STANDARD
[5] RELEASED DATE	Jun 24 2002
[6] TOTAL FILE SPACE	56
[7] FREE FILE SPACE	55
EXIT	

(c) From LCD display shows, you can get the Model/Test Capability/Software Version/Edition/Released Date/Taotal File Space and Free File Space

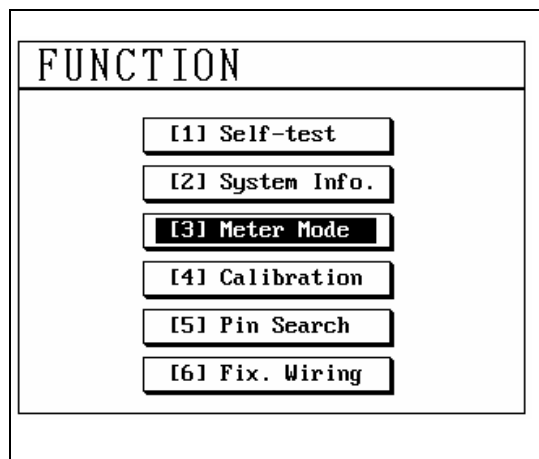
II.1.C Meter Mode

This function including Conductance/RLC/Insulation/withstanding

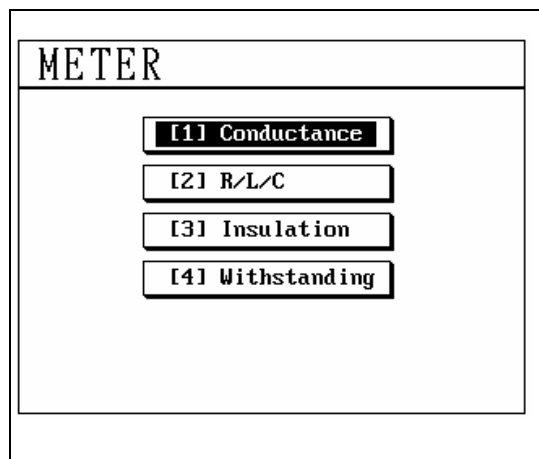


Operation Procedure

- (a) Press [Func]
- (b) Using [↑] or [↓] to select the item
- (c) LCD display as following



- (d) Press [Enter] to get in to subordinate display of the Meter Mode
- (e) LCD display as following



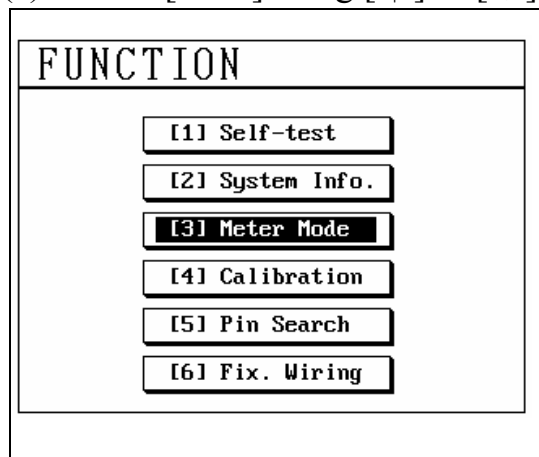


II.1.C.a Conductance

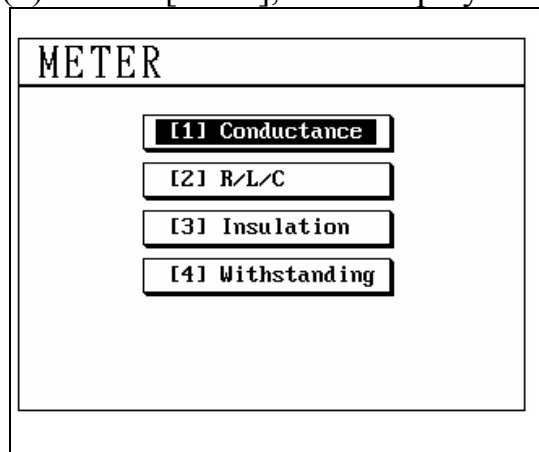


Operation Procedure

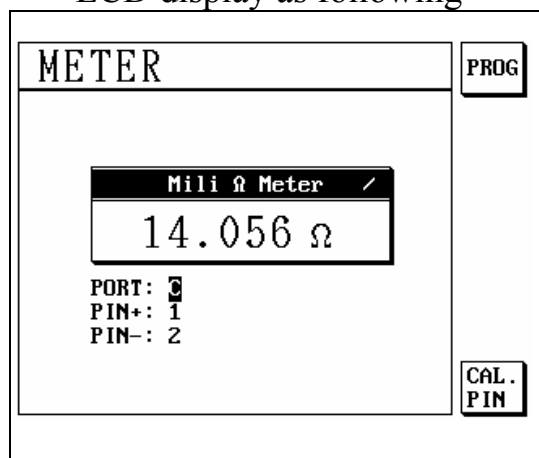
(a) Press [Func] using [$\uparrow$] or [$\downarrow$] to select the item



(b) Press [Enter], LCD display as following



(c) Press [$\uparrow$] or [$\downarrow$] to select (1) Conductance and press [Enter],
LCD display as following



(d) Press S1[PROG] to transform Port:A/B/C

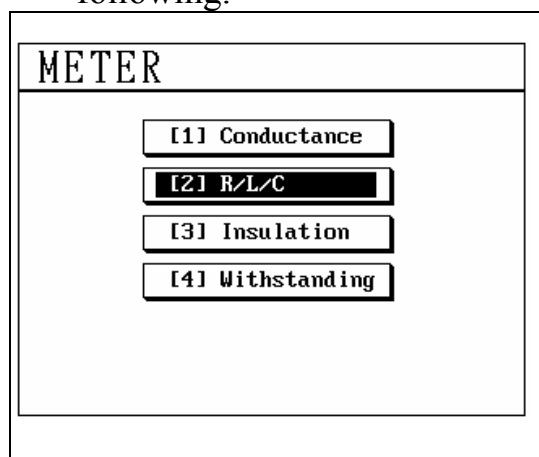
(e) Press S6 [CAL.PIN], to run calibration pin. and press [Exit] to return

II.1.C.b RLC

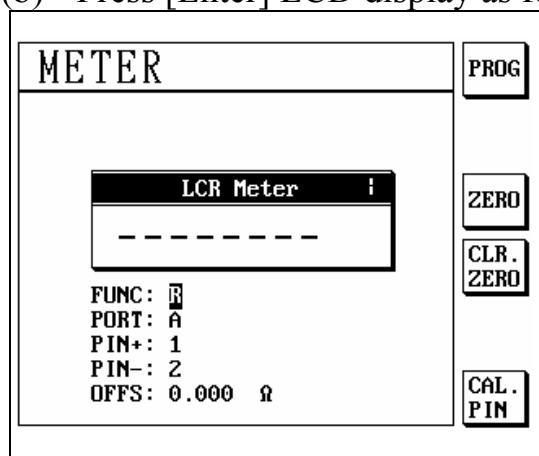


Operation Procedure

- (a) The operation is the same with conductance, in the subordinate menu of Meter Mode, using [$\uparrow$] or [$\downarrow$] to select (2) RLC item, LCD display as following.



- (b) Press [Enter] LCD display as following



- (c) Press S1 [PROG] to shift FUNC:L/C/R/D 2.PORT:A/B/C 3.PIN±
- (d) Press S3 [ZERO] meter offset (trimming)
Offset (trimming): the purpose of offset (trimming) is to eliminate the effects of stray capacitance or series impedance in the connecting leads or fixture.
- (e) Press S4 [CLR.ZERO] clear the offset value
- (f) Press S6 [CAL.PIN] to run the Calibration function
- (g) After executed, press [Exit] to return to meter select menu

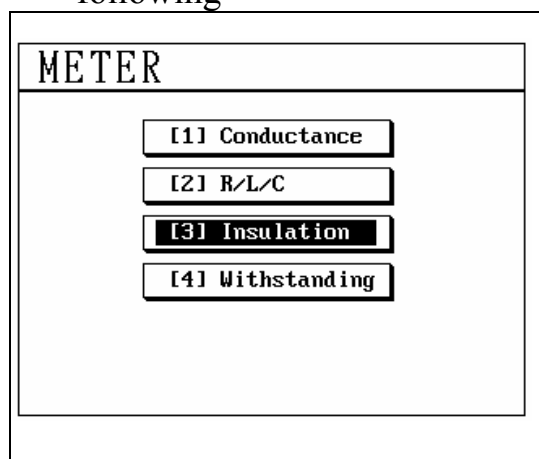


II.1.C.c Insulation

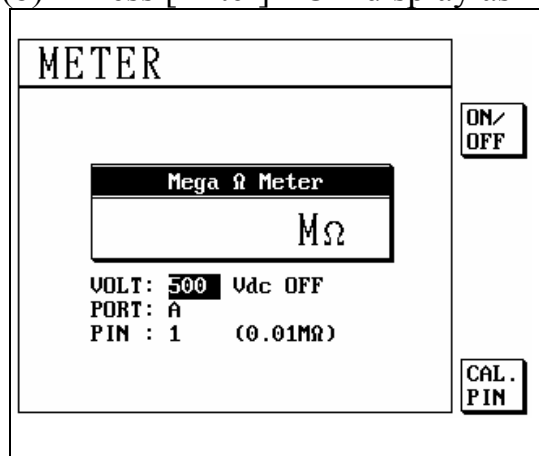


Operation Procedure

- (a) The operation is the same with conductance, in the subordinate menu of meter mode using [$\uparrow$] or [$\downarrow$] to select (3) Insulation, LCD display as following



- (b) Press [Enter] LCD display as following



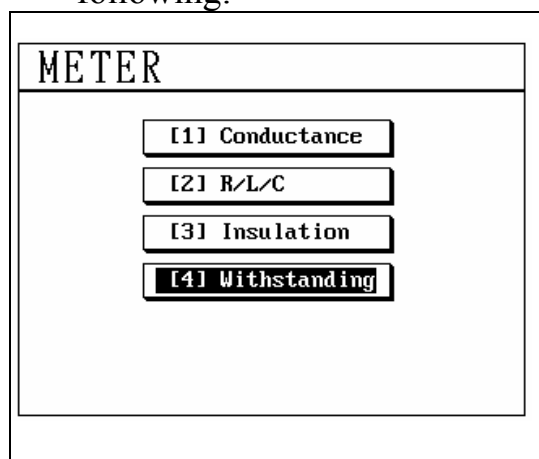
- (c) Press the S2 [ON/OFF] to turn ON/OFF the H/V output
(d) Press the S6 [CAL.PIN] to run calibration function
(e) Press the [Exit] to return to the meter select menu

II.1.C.d Withstanding

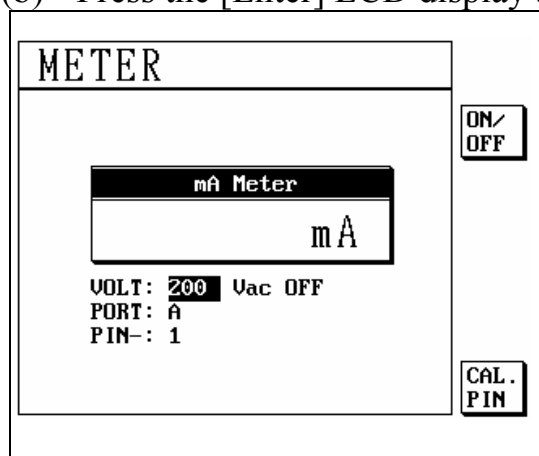


Operation Procedure

- (a) The operation is the same conductance, in the subordinate menu of meter mode using [↑] or [↓] to select (4) Withstanding, LCD display as following:



- (b) Press the [Enter] LCD display as following



- (c) Press S3 [ON/OFF] to turn ON/OFF the H/V output
(d) Press S6 [CAL.PIN] to run Calibration function
(e) Press [Exit] to return to the meter select menu



II.1.D Calibration



Operation Procedure

- (a) Press [Func]
- (b) Use [↑] or [↓] to select the item

FUNCTION
[1] Self-test
[2] System Info.
[3] Meter Mode
[4] Calibration
[5] Pin Search
[6] Fix. Wiring

- (c) Press [Enter] to enter to the subordinate menu of calibration mode
- (d) LCD display as following

CALIBRATION
[1] O/S Cal.
[2] Cond. Cal.
[3] DC H/V Cal.
[4] AC H/V Cal.
[5] Insu. Cal.

- (e) Change this function will influence the accuracy of the instrument, password is require for entering this page.
- (f) Defult password is “8700”

II.1.D.a Open/Short Calibration



Operation Procedure

(a) Press [Func] and using [↑] or [↓] to select Calibration

FUNCTION	
[1] Self-test	
[2] System Info.	
[3] Meter Mode	
[4] Calibration	
[5] Pin Search	
[6] Fix. Wiring	

(b) Press [Enter] to enter to the subordinate menu of calibration mode

(c) LCD display as following

CALIBRATION	
[1] O/S Cal.	
[2] Cond. Cal.	
[3] DC H/V Cal.	
[4] AC H/V Cal.	
[5] Insu. Cal.	

(d) Use [↑] or [↓] to select to (1) O/S Cal. And press [Enter]

(e) LCD display as following

O/S CAL.		LAST CAL. 02-08-2001	UP
RANGE	CODE		DOWN
<= 1kΩ	135		
<= 2kΩ	132		
<= 5kΩ	82		
<=10kΩ	52		
<=20kΩ	29		
<=50kΩ	13		
T/P	VALUE	STD. TEST	DONE
A01-A02	1.0 k	SHORT OPEN	QUIT
A03-A04	1.1 k	OPEN OPEN	
A05-A06	1.0 k	OPEN OPEN	
A07-A08	1.0 k	OPEN OPEN	
A09-A10	1.0 k	OPEN OPEN	
A11-A12	1.0 k	OPEN OPEN	
A13-A14	1.0 k	OPEN OPEN	
A15-A16	1.0 k	OPEN OPEN	
A17-A18	1.0 k	OPEN OPEN	
A19-A20	1.0 k	OPEN OPEN	
A21-A22	1.0 k	OPEN OPEN	
A23-A24	1.0 k	OPEN OPEN	



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- (f) Press S1[UP] or S2[DOWN] to adjust code
- (g) After Setup finished, press S5 [DONE] to save or S6 [QUIT] to exit without saving the setup

II.1.D.b Conductance Calibration



Operation Procedure

- (a) Operation the same O/S Cal. In the subordinate menu of calibration mode, using [$\uparrow$] or [$\downarrow$] to select (2)Cond. Cal. Item, LCD display as following

CALIBRATION

[1] O/S Cal.

[2] Cond. Cal.

[3] DC H/V Cal.

[4] AC H/V Cal.

[5] Insu. Cal.

- (b) Press [Enter], LCD display as following

COND. CAL.				LAST CAL.
R.	T/P	STD.	CODE	MEASURE
1	A07-A08	1.0 Ω	9928	0.0000 Ω
2	A11-A12	5.0 Ω	10012	
3	A13-A14	10.0 Ω	10021	
4	A17-A18	50.0 Ω		

UP

DOWN

DONE

QUIT

- (c) Press S1[UP] or S2[DOWN] to adjust code
- (d) After setup finished, press S5 [DONE]
- (e) If you want to abandon data, press S6[QUIT] to exit this screen

II.1.D.c DC H/V Calibration



Operation Procedure

- (a) Operation is the same before, in the subordinate menu of calibration mode, using [↑] or [↓] to select (3) DC H/V Cal, LCD display as following

CALIBRATION	
[1]	0/S Cal.
[2]	Cond. Cal.
[3]	DC H/V Cal.
[4]	AC H/V Cal.
[5]	Insu. Cal.

- (b) Press [Enter], LCD display as following

DC H/V (DC)			LAST CAL.	UP
			02-10-2001	
VOLTAGE		CODE	READING	DOWN
50	Vdc	186	48.0	AUTO DONE QUIT
100	Vdc	219		
200	Vdc	334		
250	Vdc	201		
300	Vdc	224		
400	Vdc	276		
500	Vdc	330		
600	Vdc	386		
700	Vdc	443		
800	Vdc	500		
900	Vdc	558		
1000	Vdc	616		

- (c) Press S1[UP] or S2 [DOWN] to adjust code, let the reading value match or closer to the standard voltage as much as possible
- (d) Also you can press S4 [AUTO] adjust code automatically
- (e) After setup finished, press S5 [DONE] to save
- (f) If you want to abandon data, press S6[QUIT] to exit this screen



II.1.D.d AC H/V Calibration



Operation Procedure

- (a) Operation is the same before, in the subordinate menu of calibration, use [↑] or [↓] to select (4) AC H/V Cal. LCD display as following

CALIBRATION

[1] 0/S Cal.

[2] Cond. Cal.

[3] DC H/V Cal.

[4] AC H/V Cal.

[5] Insu. Cal.

- (b) Press [Enter] LCD display as following

AC H/V (AC) LAST CAL. 02-10-2001

VOLTAGE	CODE	READING
100 Vac	100	101.0
200 Vac	200	
300 Vac	300	
400 Vac	405	
500 Vac	505	
600 Vac	610	
700 Vac	710	
800 Vac	810	
900 Vac	915	
1000 Vac	1020	

UP

DOWN

AUTO

DONE

QUIT

- (c) Press S1 [UP] or S2[DOWN] to adjust code, let the reading value match or closer to the standard voltage as much as possible
- (d) Also you can press S4[AUTO] to automatic setup code
- (e) After setup finished, press S5[DONE] to save
- (f) If you want to abandon data, press S6[QUIT] to exit from this screen

II.1.D.e Insulation Calibration



Operation Procedure

- (a) Operation is the same before, in the subordinate menu of calibration, using [↑] or [↓] to select (5) Insu.Cal. LCD display as following

CALIBRATION

[1] 0/S Cal.

[2] Cond. Cal.

[3] DC H/V Cal.

[4] AC H/V Cal.

[5] Insu. Cal.

- (b) Press [Enter], LCD display as following

INSU. CAL.				LAST CAL.
				02-10-2001
R.	T/P	STD.	CODE	MEASURE
1	A28	1000MΩ	1000	7321 MΩ
2	A22	200MΩ	994	
3	A19	100MΩ	994	
4	A10	10MΩ	1000	
5	A07	1MΩ	1000	

UP

DOWN

DONE

QUIT

- (c) Press S1[UP] or S2[DOWN] to adjust code, let the reading value match or closer to the standard voltage as much as possible
- (d) After setup finished, press S5 [DONE] to save
- (e) If you want to abandon data, press S6[QUIT] to exit from this screen



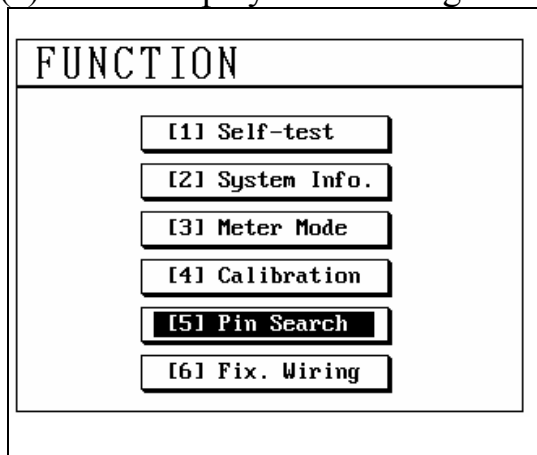
II.1.E Pin Search

The function can automatic show the pin address contacted that we select

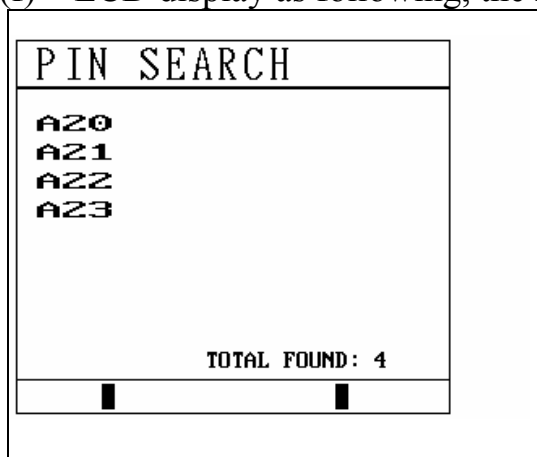


Operation Procedure

- Press [Func]
- Using [↑] or [↓] to select this item
- LCD display as following



- Press [Enter] to start search for pin
- Connect with Pin Search Probe, fixture or cable, instrument will automatic detect pin location
- LCD display as following, the A08/A09/A10/A25 locations were detected



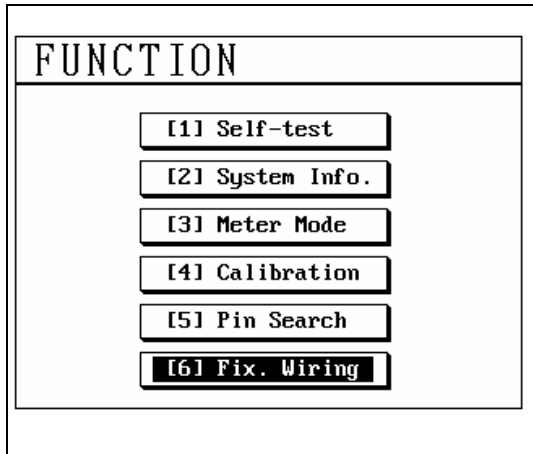
II.1.F Fixture Wiring Circuit test

This function is to check whether the fixture has made a 4 wire connection. If it shows OK that can be 4 wiring circuit, if NO that means wrong cable connect or without contact.

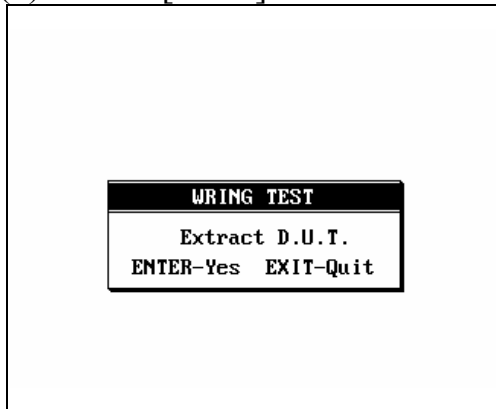


Operation Procedure

(a) Press [Func] and using [↑] or [↓] to select this item

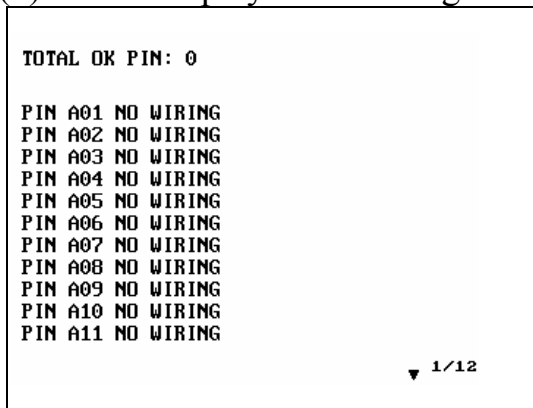


(b) Press [Enter] to start Fix. Wiring test, LCD display as following



(c) Make sure the fixture has connected and there's no any DUT(cable) connected, then press [Enter]

(d) LCD display as following





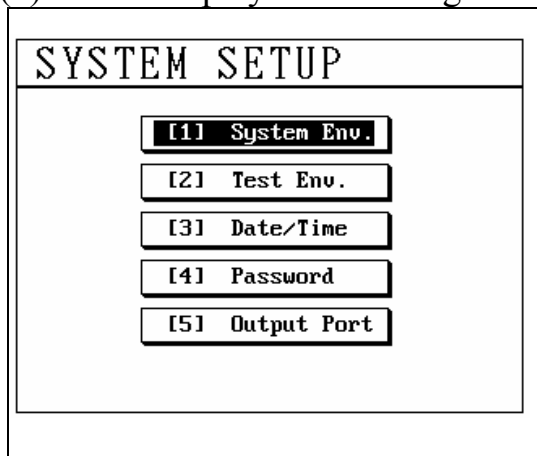
II.2 System setup

System Setup includes system configuration and test condition setup. The details describe as following.



Operation Procedure

- (a) Press [Sys]
- (b) LCD display as following



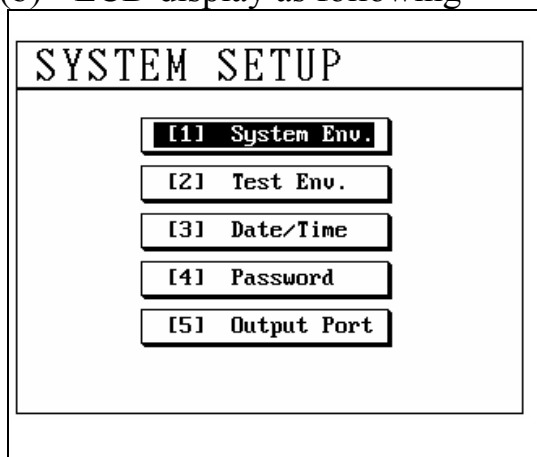
- (c) Using [↑] or [↓] to select item
- (d) Press [Enter] to get in the indicate item to setup working

II.2.A System Environments Setup



Operation Procedure

- (a) Press [Sys]
- (b) LCD display as following



- (c) Using [↑] or [↓] to select (1)System Env. And press [Enter]

(d) LCD display as following

SYSTEM ENV.		PROG
[1] Power ON Self-Test	ON	
[2] Power Line Freq.	50Hz	
[3] Key Stroke Sound	OFF	
[4] Key Operation	UNLOCK	
[5] LCD Contrast	5	
[6] Inverse LCD	OFF	
[7] Language	ENGLISH	

(e) Use [↑] or [↓] to select a setup item

(f) If need, press S1[PROG] to change, after setup finished, press [Enter]

(g) Complete setup, press [Exit] to leave

II.2.A.a Power ON Self-Test

There are 2 selections, press S1[PROG] to shift, the pre-code is | ON |

- YES Power On Self-Test function is turn on
- NO Power On Self-Test function is turn off

II.2.A.b Power Line Frequency

There are 2 selections, Press S1 [PROG] to shift, the pre-code is | 60Hz |

- 50Hz Power Line Frequency setup is 50Hz
- 60Hz Power Line Frequency setup is 60Hz

II.2.A.c Key stroke Sound

This instrument can follow requirement to shift key sound to be ON/OFF, the pre-code is |ON|

- ON Sound performed when any key pressed
- OFF Sound do not performed when any key pressed



II.2.A.d Key Operation

This instrument provide key protection that to avoid any data be modified, the default setup is |Unlock |

■ If want to select key protective or remove it which have to enter passwords, the detail please read User's Guide



Operation Procedure

(a) Press [Sys] to enter System Enviroement setup

(b) Use [↑] or [↓] to select (4)Key Operation

(c) LCD display as following

SYSTEM ENV.		PROG
[1] Power ON Self-Test	OFF	
[2] Power Line Freq.	50Hz	
[3] Key Stroke Sound	OFF	
[4] Key	CHECK PASSWORD	
[5] LC	PASSWORD	
[6] In		
[7] Language	ENGLISH	

(d) Enter passwords xxxx , LCD display as following

SYSTEM ENV.		PROG
[1] Power ON Self-Test	OFF	
[2] Power Line Freq.	50Hz	
[3] Key Stroke Sound	OFF	
[4] Key	CHECK PASSWORD	
[5] LC	PASSWORD ####	
[6] In		
[7] Language	ENGLISH	

(e) Press [Enter], LCD display as following

SYSTEM ENV.		PROG
[1] Power ON Self-Test	OFF	
[2] Power Line Freq.	50Hz	
[3] Key Stroke Sound	OFF	
[4] Key Operation	UNLOCK	
[5] LCD Contrast	5	
[6] Inverse LCD	OFF	
[7] Language	ENGLISH	

(f) Now the key protective has been removed and data can be modified, the key operation setup from |LOCK | transform to|UNLOCK|.

■ Remove the protection mode if forgotten the passwords, in the display screen {enter old passwords} and press [Shift]+[BS] the original will be shown, if want to change the passwords, please read above operation procedure.

II.2.A.e LCD Contrast

This function provide LCD bright level control, There are 1~8 steps totally.

■ 1~8 Press S1[PROG] to adjust screen contrast, screen will follow number to shift brighter or darker.

II.2.A.f LCD Inverse

Press S1[PROG] to change LCD inverse to be ON/OFF, screen will follows to shift inverse or normal.

■ ON LCD shows inverse screen
■ OFF LCD shows normal screen

II.2.A.g Language

Press S1 [PROG] to change language to be Chinese or English



II.2.B Test Environment Setup



Operation procedure

(a) Press [Sys] and using [↑] or [↓] to select Test Env. item

(b) LCD display as following

SYSTEM SETUP	
[1]	System Env.
[2]	Test Env.
[3]	Date/Time
[4]	Password
[5]	Output Port

(c) Press [Enter], LCD display as following

TEST ENV.		PROG
[1]	Test Alarme	
[2]	Display Test Data	ALL
[3]	Print Test Report	MANUAL

(d) Use [↑] or [↓] to select item which you are going to setup

(e) Press S1[PROG] to change

(f) Press [Enter] , after setup has been done

II.2.B.a Test Alarm

The function is able /unable to alarm performed during the sequence test. You can set the proper selection depending on your need.

- ALL Both PASS/FAIL sound on.
- OFF Both PASS/FAIL sound off.
- PASS Alarm performed only PASS test occurred.
- FAIL Alarm performed only FAIL test occurred.

II.2.B.b Display Test Data

The function is to activate/deactivate the display under the sequence test. When you select, the display function of test data will be set simultaneously.

- ALL Both PASS/FAIL auto print on
- FAIL FAIL auto print process only

II.2.B.c Printer Data Report

The function is to change the printer Data Report whether Auto or not.

- AUTO The Printer Data Report auto print on
- MANUAL The Printer Data Report auto print off, you have to setup by yourself.

II.2.C Date & Time Setup



Operation Procedure

- (a) Press [Sys] and use [↑] or [↓] to select item
- (b) LCD display as following

SYSTEM SETUP

[1] System Env.

[2] Test Env.

[3] Date/Time

[4] Password

[5] Output Port

- (c) Press [Enter], LCD display as following

DATE/TIME SETUP

SET

DATE: MM-DD-YY
TIME: HH:MM:SS

OLD DATE: 02-13-01
OLD TIME: 16:44:42

NEW DATE: 02-13-01
NEW TIME: 16:44:37



- (d) Press S1[SET]
- (e) Key in a exact date and time
- (f) Complete it then press [Enter] to leave

■ Hour is 24-hours mode setting

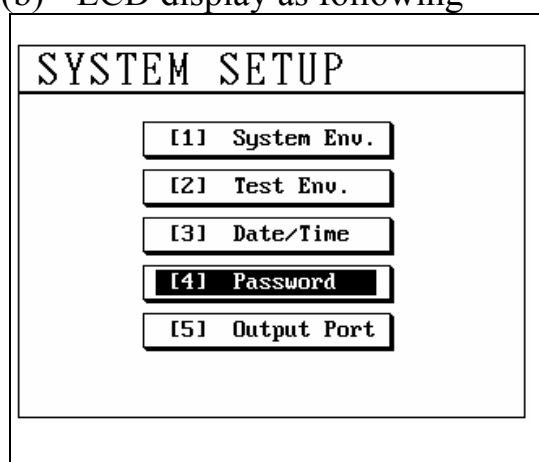
II.2.D Password Setup

You can set a system password to protect setting from revision.

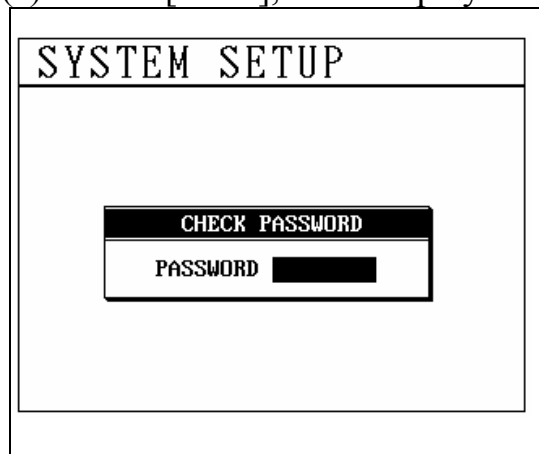


Operation Procedure

- (a) Press [Sys] and using [↑] or [↓] to select this item
- (b) LCD display as following



- (c) Press [Enter], LCD display as following



- (d) Key in a initial password and press [Enter]
- (e) Key in a new password and press [Enter]
- (f) Key in new password again and press [Enter] to confirm, the screen will display {success}
- (g) When new password setup has been done the screen will return to the selection menu
- (h) Repeat (c)-(f) steps and input the proper password to protect data

II.2.E Set Output Port



Operation Procedure

(a) Press [Sys] and use [↑] or [↓] to select this item

(b) LCD display as following

SYSTEM SETUP	
[1]	System Env.
[2]	Test Env.
[3]	Date/Time
[4]	Password
[5]	Output Port

(c) Press [Enter], LCD display as following

OUTPUT PORT		PROG
Relay board: 2 Test points: 128		
B01 - B32	B33 - B64	
A01 - A32	A33 - A64	

(d) Press S1[PROG] to change the output port setup

(e) This is to define the output port and pin



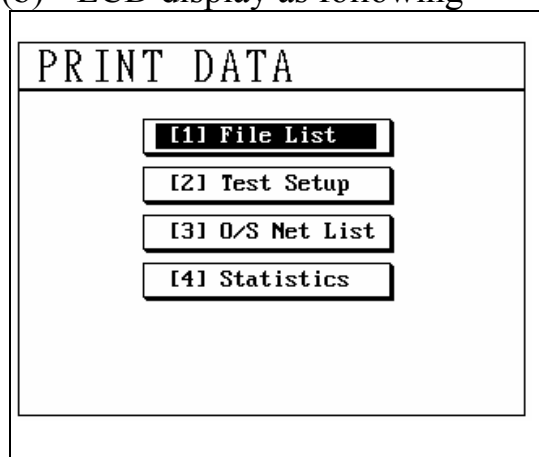
II.3 Print Function

This function is to print the test data through printer port. The operation and functions exposition as following



Operation Procedure

- (a) Press [Print]
- (b) LCD display as following



- (c) Use [↑] or [↓] to select data which you want to print
- (d) Press [Print]

II.4 Open/Short Setup & Test

This system designs to perform the O/S setup by automatic learning from the existed connections. After the learning process, the LCD display will automatically show O/S status of DUT.



Operation Procedure

(a) Press [O/S], LCD display as following

O/S LIST		FILE:CABLE
Net	Pin#	Page: 1/6 64Net(s)
001	A01-A33	
002	A02-A34	
003	A03-A35	
004	A04-A36	
005	A05-A37	
006	A06-A38	
007	A07-A39	
008	A08-A40	
009	A09-A41	
010	A10-A42	
011	A11-A43	
012	A12-A44	

LEARN

O/S EDIT

(b) The O/S list come from learning, so press S3 [LEARN]

(c) Press S6 [O/S EDIT], LCD display as following

O/S EIDT		FILE:CABLE
[1] O/S Threshold	<=20kΩ	PROG
[2] O/S Scanning Speed	AUTO	
[3] O/S End Detection	YES	LEARN
[4] Int. O/S Stop Mode	AUTO	
[5] Int. O/S Timer	3.0 Sec	

(d) Press S1[PROG] and key in alphanumeric what you want to setup

(e) Complete it and press [Exit] to leave

II.4.A O/S Threshold Setup

Press S1 [PROG] to shift value in 2/5/10/20/50 kΩ

II.4.B O/S Scanning Speed

Press S1 [PROG] to shift AUTO/FAST/MED/SLOW



II.4.C O/S End Detection

When run into the Open/Short whether to detect pins or not. If setup is NO that speed would be faster, but do not detect the O/S end.

Press S1[PROG] to change setup to be YES/NO

II.4.D Int. S/O Stop Mode

Press S1[PROG] to change setup to be AUTO/TIMER

- AUTO : The system is repeatedly testing until the DUT cables completely take off then stop automatically.
- TIMER : To follow the test time doing test

II.4.E Int. O/S Timer

Use alphanumeric to key in Int. O/S timer, but if mode setup is AUTO and this setting will not work

II.5 Statistic Report

You can view the statistics report by just press [Stat] key. The report includes total test amounts, pass/fail amount and fail analysis in quantity/percentage.



Operation Procedure

(a) Press [Stat], LCD display as following

STAT.	FILE:CABLE	QTY. RATE
TESTED	0	
PASSED	0	
FAILED	0	
FAIL ANALYSIS		
O/S	0	
COND.	0	CLR.
RLC	0	
INSU.	0	
WITH.	0	
I.COND	0	
I.O/S	0	

(b) Press S1[QTY.RATE] to display in percentage mode

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(c) LCDdisplay as following

STAT.	FILE:CABLE	QTY. RATE
TESTED	0.00%	
PASSED	0.00%	
FAILED	0.00%	
FAIL ANALYSIS		
O/S	0.00%	
COND.	0.00%	CLR.
RLC	0.00%	
INSU.	0.00%	
WITH.	0.00%	
I.COND	0.00%	
I.O/S	0.00%	

(d) Press S4 [CLR] to clean the data of statistic

(e) Press [Exit] to leave



Chapter III Sequence Test Setup

Sequence test was designed by software programming to test DUT by multiple test condition (setup) to complete the auto test in single routine by pressing just one button. It saves time and effort effectively in mass production lines. It includes three sessions.

- Test Condition Setup
- Run The Sequence Test
- File Management

III.1 Test Condition Setup

Test conditions setup are defined to setup the test signals, control limits, and necessary items before preceding the sequence test routine. That includes O/S / Cond /RLC/HV ...setup.

- The signs of test parameter (Frequency, voltage and Current)
- Control standard. specification standard and tolerate percentage

III.1.A Open/ Short



Operation Procedure

- Press [O/S]
- LCD display as following

O/S LIST		FILE:CABLE
Net	Pin#	Page: 1/6 64Net(s)
001	A01-A33	
002	A02-A34	
003	A03-A35	
004	A04-A36	
005	A05-A37	
006	A06-A38	
007	A07-A39	
008	A08-A40	
009	A09-A41	
010	A10-A42	
011	A11-A43	
012	A12-A44	

LEARN

O/S
EDIT

- Open/Short list is from learning
- Complete it then press [Exit] to leave

III.1.B Conductance Setup



Operation Procedure

- (a) Press [Cond]
- (b) LCD display as following

COND EDIT FILE:CABLE	
[1] Hi Limit	2.000 Ω
[2] Lo Limit	0.000 Ω
[3] Test Speed	FAST
[4] Int. Limit (ΔR)	±0.10 Ω
[5] Int. Stop Mode	AUTO
[6] Int. Timer	3.0 Sec

- (c) Use [↑] or [↓] to select the item needed
- (d) Complete setup, press [Exit] to leave
 - High limit use number key to enter value, the limit is 0~50Ω
 - Low limit use number key to enter value, the limit is 0~50Ω
 - Test Speed Press S1[PROG] to shift speed as
FAST/LOWER/FMID/AUTO
When setting is AUTO, the system will automatically
select fastest and steadiest test speed to progress
 - Int. Limit Spec Use numeric key to enter value, the limit is ±50Ω
This function provides the repeatedly test at one DUT
 - Int. Stop Mode Use S1 [PROG] to change mode be AUTO/TIMER
AUTO: System will test repeated until DUT cable
completely take off then automatic stop
TIMER: Follow test time to do test
 - Int. timer Use alphanumeric key to setup second, the limit is 0~99,
However, when the Int. stop mode setting is auto, this
function will not work.



III.1.C R/L/C Setup



Operation Procedure

- (a) Press [RLC]
- (b) LCD display as following

R/L/C		STEP1	PAGE1	HOME		
Name	T	P+	P-	Std-Val	Tol%	END
[Redacted]						COPY DEL.

- (c) Use S1 [HOME] move cursor to the first of R/L/C setup data.
- (d) Press S2 [END] move cursor to the end of R/L/C setup data
- (e) Press S4 [COPY] to copy a data from last row
- (f) Press S6 [DEL.] to delete a data which you selected
- (g) Use alphanumeric keys to enter a name for the file. For example, enter 1 for the first data

R/L/C		STEP1	PAGE1	HOME		
Name	T	P+	P-	Std-Val	Tol%	END
1						COPY DEL.

- (h) Press [Enter] to confirm

- (i) Move cursor to T(Type) , LCD display as following

R/L/C						STEP1	PAGE1
Name	T	P+	P-	Std-Val	Tol%		
1	R	A01	A02	1.00	Ω ± 10.0		

R

L

C

D

- (j) Press S1[R]/S2 [L]/S3[C]/S4[D] to select item which want to setup
 (k) The symbol as follow: R-Resistance, L-Inductance, C-Capacitance, D-Diode
 (l) After selected, Press [Enter] cursor will move to "P+", LCD display as following

R/L/C						STEP1	PAGE1
Name	T	P+	P-	Std-Val	Tol%		
1	R	A01	A02	1.00	Ω ± 10.0		

A

B

- (m) Use S1[A] or S2[B] to select A/B, and use alphanumeric to enter setup pin
 (n) Press [Enter] to confirm
 (o) Cursor will move to "Std-Val" , LCD display as following

R/L/C						STEP1	PAGE1
Name	T	P+	P-	Std-Val	Tol%		
1	R	A01	A02	1.00	Ω ± 10.0		

Ω

k Ω

M Ω



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- (p) In this item, use the alphanumeric to setup stand value as weel
- (q) After, use S1[Ω]/S2[KΩ]/S3[MΩ] to select a unit of Std-Val unit
- (r) Press[Enter] to confirm, cursor will move to “Tol%” display as following

R/L/C						STEP1	PAGE1	>= STD.
Name	T	P+	P-	Std-Val	Tol%			<= STD.
1	R	A01	A02	1.00	Ω	±10.0		

ALL SAME

- (s) Use alphanumeric to setup tolerate
- (t) Use S1[>=STD]/S2[<=STD]/S6[ALL SAME] to shift tolerate setup
- (u) Following this way to setup test condition what you needed, LCD display as following

R/L/C						STEP4	PAGE1	>= STD.
Name	T	P+	P-	Std-Val	Tol%			<= STD.
1	R	A01	A02	1.00	Ω	±10.0		
3	L	A01	A02	1.00	μH	±10.0		
5	C	A01	A11	1.00	pF	±10.0		
7	D	A13	A15	1.00	V	±10.0		

ALL SAME

- (v) Press [Enter] to confirm, LCD display as following

R/L/C						STEP5	PAGE1	HOME
Name	T	P+	P-	Std-Val	Tol%			END
1	R	A01	A02	1.00	Ω	±10.0		
3	L	A01	A02	1.00	μH	±10.0		
5	C	A01	A11	1.00	pF	±10.0		
7	D	A13	A15	1.00	V	±10.0		

COPY
DEL.

- (w) Complete it then press [Exit] to leave

III.1.D Test Mode Edit

Test Mode Setup is to set the related action during the sequence test routine.



Operation Procedure

- (a) Press [Mode]
- (b) LCD display as following

MODE EDIT FILE: CABLE	
[1] Trigger Mode	MANUAL
[2] Trigger Delay	0.0 Sec
[3] Break Point	0/S
[4] Repeated Test	OFF
[5] Repeated Count	0
[6] Repeated Interval	0.0 Sec

PROG

PARA

- (c) Use [↑] or [↓] to move cursor to the item you want to setup
- (d) Use alphanumeric to enter setup value, or press S1[PROG] to change setup of the test items.
- (e) Press S6 [PARA] to select item which you want to test
- (f) Press S6 [PARA], LCD display as following

TEST PARA FILE: CABLE	
PARAMETERS	TEST
[1] 0/S	☒
[2] Conductance	☒
[3] R/L/C/D	
[4] DC Insulation	☒
[5] AC Withstanding	☒
[6] Intermittent Cond.	
[7] Intermittent 0/S	

PROG

MODE

- (g) Use [↑] or [↓] to move cursor to an item which you want to setup
- (h) Press S1[PROG] to change that item whether process test or not



(i) The Items Exposition

- Trigger Mode Press S1[PROG] to shift setting to be MANUAL / AUTO. When this function is ON, the system will scan cable whether connect with fixture or not. If so, the system will start testing automatically, when the setting is OFF, you can only use [Test] to start test.
- Trigger Delay Use alphanumeric to enter delay times.
- Break Point Press S1[PROG] to shift test setting to be OFF / O/S / L/V.
- Repeat Test Press S1[PROG] to shift setting to be ON / OFF.
- Repeat Count Use alphanumeric to enter repeated test count. When the setting is ON, the test count setting is 0, the system will test repeatedly until run against a fail.
- Repeat interval Use alphanumeric to enter repeated test interval time.

III.2 Run The Sequence Test

After the setup completion of all items you needed, the system is ready to proceed and run the sequence test routine. For the two occasions will occur description as below:

III.2.A Run The Real Time Sequence Test

This routine is called in applying the setups stored in system memory to process the sequence test.



Operation Procedure

- (a) Check out all of test setup
- (b) Press [Mode] will display test mode setup
- (c) Check out and confirm the test mode setup whether correct or not, and modify if needed.
- (d) Press [EXIT] to return to the main screen
- (e) Press [TEST] to start test
- (f) When finish or need discontinue test, press [EXIT] to leave.

III.2.B Run The Existed Sequence Test

You can load existed file from storage memory to main memory to run the sequence test routine.



Operation Procedure

- (a) Press [File]
- (b) Use [↑] or [↓] to move cursor to the file you needed
- (c) Press [Enter] to confirm selection and call the file load routine
- (d) LCD will return to main screen and the file shows that file name you have selected
- (e) Press [EXIT] to return to main screen
- (f) Press [Mode] display the test mode setup screen
- (g) Check out all test setup previously before saving
- (h) Press [EXIT] to return to main screen
- (i) Press [TEST] and start testing
- (j) Press [EXIT] to leave when the test finish or discontinue



III.3 File Management

You can call the Load; Sort or Del routines to proceed file management for running the EXISTED SEQUENCE TEST implementation:

III.3.A Open File

Open File is to load a file in storage memory to main memory, which completes the preparation for the running of sequence test.



Operation Procedure

- Press[File]
- LCD display as following

F I L E				NEW
Total 4 file(s)				SAVE AS
No.	Name	Date	Time	DEL.
1	CABLE	02-13-01	17:30	SORT
2	HIPORT	02-13-01	15:18	
3	INSUL	02-13-01	15:17	
4	NONAME	02-13-01	15:15	
				VIEW MODE

- Use [↑] or [↓] move cursor to the item you needed
- Press [Enter] to start loading file
- The tester start to load file from those files have been selected into main memory.
- LCD display will return to main screen, the present file will show the files name as you have selected, now then, the files load are complete.

III.3.B Open New File



Operation Procedure

- (a) Press [File], and press S1[NEW] to open an new file
- (b) LCD display as following

F I L E				Total 4 file(s)	NEW
No.	Name	Date	Time		
1	CABLE	02-13-01	17:30		SAVE AS
2	HIPOINT	02-13-01	15:18		
3	INSUL	02-13-01	15:17		DEL.
4	CREATE NEW FILE			15	
NAME 					
ENTER- OK EXIT- QUIT					
					SORT
					VIEW MODE

- (c) Enter an name for new file
- (d) Confirm the file which you are going to setup and press [Enter] the file has been done.

III.3.C Delete File

Delete File routine is to delete the file in storage memory parentally to save the space of storage memory.



Operation Procedure

- (a) Press [File] and use [↑] or [↓] to select the item you want to delete.
- (b) Press S3 [DEL.] to delete file
- (c) LCD display as following

F I L E				Total 4 file(s)	NEW
No.	Name	Date	Time		
1	CABLE	02-13-01	17:30		SAVE AS
2	HIPOINT	02-13-01	15:18		
3	INSUL	02-13-01	15:17		DEL.
4	CREATE NEW FILE			15	
NAME CABLE					
ENTER- OK EXIT- QUIT					
					SORT
					VIEW MODE

- (d) Confirm the file's name and press [Enter], the file will be deleted.



III.3.D Sort File

Save File routine is to save the file in main memory to storage memory for the application of editing, monitoring, and running of sequence test.



Operation Procedure

- (a) Press [File]
- (b) LCD display as following

F I L E				NEW
Total 4 file(s)				SAVE AS
No.	Name	Date	Time	DEL.
1	CABLE	02-13-01	17:30	SORT
2	HIPORT	02-13-01	15:18	
3	INSUL	02-13-01	15:17	
4	NONAME	02-13-01	15:15	
				VIEW MODE

- (c) Press S5[**SORT**] to sort files depend on your selection
 - Descending by name
 - Ascending by name
 - Ascending by sequence of stored date
 - Descending by date
 - Ascending by date

III.4 View Mode

This function display the mode of the files record



Operation Procedure

- (a) Press [File]
- (b) LCD display as following

F I L E				Total 4 file(s)	NEW
No.	Name	Date	Time		SAVE AS
1	CABLE	02-13-01	17:30		DEL.
2	HIPOINT	02-13-01	15:18		
3	INSUL	02-13-01	15:17		
4	NONAME	02-13-01	15:15		
					SORT
					VIEW MODE

- (c) Use S6[VIEW MODE] to shift files management screen to be simple sort files, display as following.

F I L E				Total 4 file(s)	NEW
Date: 02-13-01				Time: 17:30	SAVE AS
CABLE	HIPOINT	INSUL			DEL.
NONAME					
					SORT
					VIEW MODE

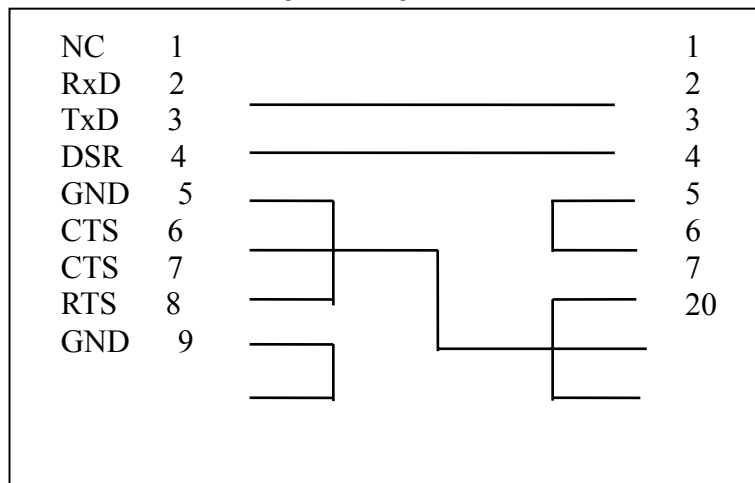


APPENDIX A 、 CT-8700 Cable sets

1. RS-232C CABLE

9-PIN connector (Female)

25-PIN connector (Female)



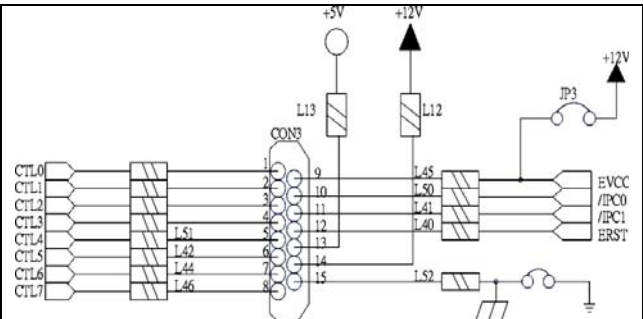
2. PRINTER CABLE

25-PIN connector (Male)	36-PIN connector (Male)	Symbol
1	1	STROBE
2	2	DATA 0
3	3	DATA 1
4	4	DATA 2
5	5	DATA 3
6	6	DATA 4
7	7	DATA 5
8	8	DATA 6
9	9	DATA 7
10	10	ACKNLG
11	11	BUSY
13	13	SLCT
18 ~ 25	19 ~ 30, 33	GND

3. CT-8700 REMOTE

15-PIN Connector

1	CTL0	9	
2	CTL1	10	IPCØ
3	CTL2	11	
4	CTL3	12	
5	CTL4	13	
6	CTL5	14	
7	CTL6	15	GND
8	CTL7		

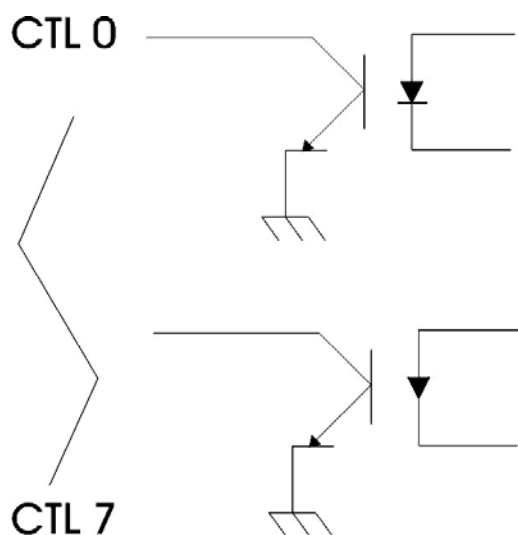


IPCØ+GND define as [TEST] input (short these two pins)

On testing status, the CTL 0, CTL 2, CTL 3, are the output signal which are defined as bellow:

CTL0	"PASS" status
CTL1	"FAIL" status
CTL2	
CTL3	

CTL0 ~ CTL1 Inside circuit diagram listed as following





APPENDIX B、CT-8700 Test Range and Function

ITEM	SYMBOL	TEST RANGE
Open/Short	O/S	1Ω~50KΩ
Intermittent O/S		1Ω~50KΩ
O/S End judgement		
Conductance	COND	Max. 50.0Ω
Intermittent Cond.		Max. 50.0Ω
Resistance	R	Max. 10.0MΩ
Capacitance	C	10pF~1μF
Zener	Zener	0~8V
Insulation	IR	0.1MΩ~1.5GΩ
Hipot	Hipot	Max. 5mA

APPENDIX C、CT-8700 Specification

Advanced Functions	4-Wire Measurement Programmable Sequential Test Auto Pin Search Self Diagnostic Self Calibration
Scanning Mode	Auto/Short Switchable
Test Single Information	Output Rating: 5Vdc DC Hipot / Insulation 50~1000Vdc/50~1000Vac(/FA) 50V Resolution ±1% Accuracy
Display and Sound	320 x 240 Graphic LCD Display Pass/Fail LED Indicator/LCD Display Internal Speaker
Connections	64 Test Points 128 Test Points (Optional) Hipot Calibration +/- Output Auto Pin Search Jack
Front Panel Control Buttons	Syskey / Fastkey / Editkey
I/O Interface	RS-232 Port Printer Port Remote Control Port
Memory	56 Setup Files Max. 120 Setup Files (Optional)
Power Supply	115/230Vac ± 10% Switchable 60/50Hz
Accessory	Remote Control Cable (Optional) RS-232 Cable (Optional) Power Cord User's Guide
Temperature & Humidity	15°C~35°C RH ≤ 75%
Dimension (WxHxD)	425 x 190 x 350mm
Weight	Approx, 15kgs (w/o Accessory)
Cable Capacitance Limit	1μF Max.
Ordering Information CT-8700 /128P /256P	4- Wire Universal Cable / Harness Tester 128 Test Points 256 Test Points